

REMARKS

In the examiner's Final Office Action, he indicates that Applicant's most recent remarks given in response to the prior non-final Office Action have been fully considered but were found unpersuasive. Since the references cited by the examiner in that prior Action and again in this Final Action definitively do not disclose or suggest the present invention as claimed, Applicant believes that it must somehow have failed to make clear its past arguments. This response, therefore, is kept brief by concisely focusing on why the cited references simply cannot be used to sustain the examiner's proffered obviousness rejections.

The examiner maintains his obviousness rejection against claims 1, 2, 7, 10, 13, and 14 based on Wallace (of record) as modified by Koga (of record). Claim 1 stands as the lone independent claim in this rejected group and it includes the limitations of coherently transmitting transmit signals from a plurality of transmitters over different propagation channels to a plurality of receivers, and forming those transmit signals from information signals intended for different ones of the receivers such that, at each receiver, the wanted information signals combine and the unwanted information signals cancel.

Simply put, claim 1 sets out a method wherein different transmit signals are sent over different propagation paths to each one of the receivers with the transmit signals formulated such that the combination of transmit signals at each of the receivers' locations inherently combine to enhance the information signal intended for that particular receiver, while suppressing the information signals intended for the other receivers. This selective constructive combining of wanted information signals and destructive combining of unwanted information signals happens inherently at each receiver's location and is utterly independent of anything the individual receivers might or might not do by way of additional interference cancellation. That is, and the examiner has utterly failed to address this point in Applicant's last response, the claimed transmit signals combine in free space at each receiver's location to achieve the wanted signal combining and unwanted signal cancellation.

Wallace simply does not disclose formulating transmit signals in the claimed manner and Koga does nothing to remedy that fatal defect. Contrariwise, the examiner asserts that Wallace does teach the claimed formulation of transmit signals but this assertion will not be supportable in the face of any considered analysis, such as will have to be undertaken by the examiner on Applicant's appeal of this final rejection.

Specifically, the examiner cites to Wallace at col. 24, lines 25-54 and col. 24, lines 53-61, for the proposition that Wallace teaches transmit signals that constructively and destructively combine in the claimed manner. The only thing disclosed by Wallace at the cited passages is a receiver that includes multiple receive antennas to receive transmit signals from a number of transmit antennas, and a combining circuit to orthogonalize and combine the various received signals. This passage of Wallace does not even suggest that the transmitting system can formulate and coherently transmit a number of transmit signals over different propagation paths such that, without operation by the intended receiver, the different transmit signals inherently combine in the claimed manner at the receiver's physical location.

Indeed, the examiner admits that Wallace does not disclose formulating its transmit signals such that unwanted information signals cancel at each receiver's location, but erroneously claims that Koga adds such teaching. This assertion by the examiner is mistaken and will fail on appeal. The examiner cites to Koga at col. 1, lines 40-53, for the proposition that Koga teaches the claimed cancellation of unwanted signals. Koga offers no such teaching and, indeed, discloses only that the receiver processing might be carried out in a way to achieve the desired interference cancellation. What such receiver processing has to do with making the claimed formulation of transmit signals to achieve inherent cancellation at each receiver's location is left un-addressed by the examiner in his earlier rejection, and similarly goes un-addressed in his final rejection.

Because neither Wallace nor Koga, nor any combination of the two teaches the claimed method, Applicant is not compelled to comment on the examiner's proffered reasons for why it

would be obvious to combine the two references. However, it is worth noting that the receiver operations of Koga are less sophisticated than those outlined in Wallace, and that the receiver cancellation operations the examiner proposes to take from Koga are already performed by the receiver(s) of Wallace as adapted for the transmit/receiver diversity context described in Wallace. Therefore, one skilled in the communication arts frankly would not perceive Koga as offering anything to Wallace in terms of enhancing or improving performance. Indeed, one skilled in the art might fairly question why one would understand Koga as being relevant to Wallace at all.

The examiner makes further obviousness rejections of claim 15-17, 19-24, 41-43, 46, 51-55, 58-60, 63, and 64, again using Wallace as the base reference but this time in combination with Harrison (of record). Again, without belaboring the point and with reference to the above arguments, Wallace simply does not disclose what the examiner asserts that it does. Specifically, Wallace does not disclose forming transmit signals for transmission over different propagation paths, wherein the transmit signals are formed of combinations of different information signals weighted in a manner such that unwanted information signals tend to cancel at each receiver's location and wanted information signals tend to add.

Note that in these rejections, the examiner makes reference to various passages in Wallace at cols. 2, 8, 9, 13, 14, and 24, for the proposition that Wallace discloses preconditioning the transmit signals to achieve the claimed signal cancellation. Applicant has carefully read every word in the cited passages and finds only that Wallace discloses using channel state information to compensate the transmission of channels or sub-channels intended for a given receiver. Critically, it does not disclose forming all of the combinations of information signals intended for the different receivers such that, at each receiver's location, the plurality of transmit signals inherently combine in a manner that tends to add the information signal intended for that receiver and tends to cancel the information signals intended for the other receivers.

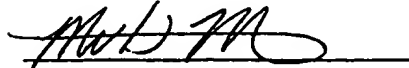
Respectfully, Applicant urges the examiner to make a considered analysis of the rejected claim language and offer a clearly articulated basis for finding the claimed function in the cited passages of Wallace, or anywhere in its disclosure. Further, Applicant points out that, as with Koga, the addition of Harrison to Wallace does nothing to cure the fatal defects in the examiner's proffered obviousness rejections, which defects cause those rejections to fail as a matter of law.

For the same or similar reasons, the examiner's further obviousness rejections of claims 18, 25, 34, 37-40, 56, and 57, over Wallace in combination with Harrison, and in further view of Raleigh (of record) fail as a matter of law. Simply put, Wallace fails to disclose what the examiner alleges, and the addition of Harrison, Raleigh, or any combination thereof, does not remedy such failings. Similarly, the rejection of claim 23 based on Wallace in combination with Harrison and in further view of Dabak (of record), fails as a matter of law, at least for the reasons already articulated. It is unnecessary for Applicant to comment on the increasingly tenuous nature of the examiner's proffered reasons for why these combinations of references would be obvious to those skilled in the art for the simple reason that none of the proffered combinations teaches or suggest Applicant's invention.

While Applicant is grateful for the indication of allowable subject matter, it firmly believes that the examiner has not fully considered Applicant's prior remarks because the major shortcomings of Wallace and the other references as detailed in the prior response are left unaddressed by the examiner. Respectfully, simply repeating Applicant's claim language more or less verbatim, and calling out passages of the cited references is not enough in the face of specific rebuttal analyses as offered by Applicant. Indeed, based on its careful analysis of all cited references, Applicant believes that it is fairly entitled to the subject matter disclosed in all pending claims, including those standing under final rejection by the examiner. As such, Applicant respectfully requests careful reconsideration as such by the examiner.

Respectfully submitted,

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